

CLAIMS

1. An air supply device comprising:

a compression mechanism section having a stationary scroll and an
5 orbiting scroll held in engagement with each other;

a drive section for driving the compression mechanism section;

the compression mechanism section and the drive section having a
common shaft, by way of which the orbiting scroll is caused to undergo an orbiting
motion with respect to the stationary scroll to thereby compress air sucked into the
10 compression mechanism section;

a plurality of rotation constraint members for preventing rotation of the
orbiting scroll about its own axis, but allowing the orbiting scroll to orbit relative to
the stationary scroll;

a plurality of first grease-filled bearings for rotatably supporting the
15 common shaft;

a plurality of second grease-filled bearings for rotatably supporting the
orbiting scroll;

a plurality of third grease-filled bearings for rotatably supporting each
of the rotation constraint members;

20 each of the second bearings having an outer ring, an inner ring, a
plurality of rolling elements interposed between the outer and inner rings, and two
sealing materials disposed on respective sides of the plurality of rolling elements,
each of the sealing materials having an inner end held in contact with the inner ring
and an outer end held in contact with the outer ring.

25 2. The air supply device according to claim 1, wherein each of the
sealing materials has an inner bent portion that has been bent towards a
low-pressure side from a high-pressure side, the inner bent portion being held in
contact with the inner ring.

3. The air supply device according to claim 1 or 2, wherein one of acrylic rubber, Teflon rubber and fluoro rubber is used for the sealing materials.

4. The air supply device according to any one of claims 1 to 3, wherein each of the rotation constraint members comprises a crankpin having an insertion
5 portion inserted into an associated one of the third bearings, the insertion portion having a groove defined in a surface thereof so as to extend parallel to a longitudinal axis thereof.

5. The air supply device according to any one of claims 1 to 4, wherein the compression mechanism section has a plurality of recesses defined therein into
10 each of which one of the third bearings is press fitted, each of the plurality of recesses having a groove defined in an inner surface thereof so as to extend parallel to a longitudinal axis of an associated one of the rotation constraint members.

6. The air supply device according to claim 4 or 5, wherein the groove
15 has a width and a depth both in a range of 0.1mm to 1.0mm.